

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: MS Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

November 15, 2005

Signature:

(James P. Zeller)

JFW  
Docket No.: 29936/39762  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Sang Kyun Park

Application No.: 10/720,849

Filed: November 24, 2003

For: Method of Forming Copper Wiring in  
Semiconductor Device



Group Art Unit: 2818

Examiner: Phuc T. Dang

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT  
UNDER 37 C.F.R. § 1.181**

Mail Stop Petitions  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.181, the applicants, through their undersigned attorney, hereby petition to withdraw the holding of abandonment and to remail a notice of allowance in the above-referenced application without penalty to the applicant.

No terminal disclaimer or fee is believed to be required.

A notice of abandonment for failure to timely pay the required issue fee and publication fee in this application was issued October 13, 2005. A review of the Patent and Trademark Office PAIR reads that a notice of allowance was mailed February 18, 2005. However, the notice of allowance was never received by the undersigned attorney's law firm.

Submitted herewith are the following:

- (a) a copy of a Notice of Abandonment dated October 13, 2005 (Exhibit "A");
- (b) a copy of the "Notice of Allowance and Fee(s) Due" dated February 18, 2005 (Exhibit "B");

(c) a copy of the undersigned law firm's electronic database docketing record for application file 29936/39762 (U.S. Patent Application No. 10/720,849) showing that the February 18, 2005, notice of allowance was never received (Exhibit "C"); and

(e) a declaration of James P. Zeller, the undersigned attorney for this application, attesting on a personal knowledge basis that the February 18, 2005, notice of allowance was never received (Exhibit "D").

Applicants submit that the guidelines for granting a "Petition to Withdraw Holding of Abandonment" outlined in chapter 711.03(c)(I) of the Manual of Patent Examining Procedure have been satisfied. In accordance with 37 C.F.R. § 1.181(f), this paper is timely filed, as it is being submitted within two months of the mailing date of the notice of abandonment. No petition fee is required.

In view of the foregoing, withdrawal of the holding of abandonment, acknowledgement of the active status of this application, and re-issuance of a notice of allowance are respectfully requested.

Although the applicants believe that no other fees are due, the Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 13-2855.

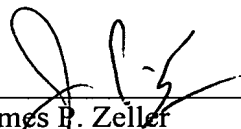
If there are matters that can be discussed by telephone to further the prosecution of this application, Applicants respectfully request that the examiner call its attorney at the number listed below.

November 15, 2005

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

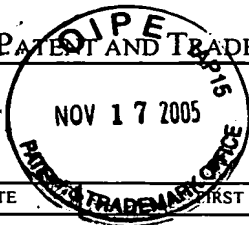
By:

  
\_\_\_\_\_  
James P. Zeller  
Registration No. 28,491  
Attorney for Applicants

233 South Wacker Drive  
6300 Sears Tower  
Chicago, Illinois 60606-6357  
(312) 474-6300



UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
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P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/720,849

11/24/2003

Sang Kyun Park

29936/39762

5192

4743

7590

10/13/2005

RECEIVED

EXAMINER

DANG, PHUC T

MARSHALL, GERSTEIN & BORUN LLP  
233 S. WACKER DRIVE, SUITE 6300  
SEARS TOWER  
CHICAGO, IL 60606

OCT 21 2005

ART UNIT

PAPER NUMBER

2818

MARSHALL GERSTEIN

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Notice of Abandonment

Application No.

10/720,849

Examiner

Dang

Applicant(s)

Park

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☐ Applicant's failure to timely file a proper reply to the Office letter mailed on \_\_\_\_\_.
  - (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.  
(A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - (d) ☐ No reply has been received.
2. ☒ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - (b) ☐ The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - (c) ☒ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - (a) ☐ Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:

slk

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

# **Attachment to Notice of Abandonment**

**For questions concerning the notice contact  
Office of Patent Publication**

**Image Assistance Center: 888-786-0101.**

Information is also available on the USPTO Internet web site:  
<http://www.uspto.gov/web/patents/pubs/abandonnotice.html>

## **Respond to the Notice of Abandonment by one of the following:**

- 1. Petition To Withdraw Holding of Abandonment (See MPEP 711.03(c) I and 37 CFR § 1.181) No fee required**

Where an applicant contends that the application is not in fact abandoned (e.g., a reply was in fact filed), a petition under 37 CFR § 1.181(a) requesting withdrawal of the holding of abandonment is the appropriate course of action. Any petition under 37 CFR § 1.181 to withdraw the holding of abandonment not filed within 2 months of the mail date of a Notice of Abandonment may be dismissed as untimely under 37 CFR § 1.181(f). In order for a petition to be granted, the evidence must be sufficient according to 37 CFR § 1.8(b) Certificate of Mailing 37 CFR § 1.10 "Express Mail" mailing or MPEP 503 Postcard Receipt as Prima Facie Evidence. The petition should be addressed as follows:

By mail: Mail Stop: Issue Fee, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

- 2. Petition To Withdraw Holding Of Abandonment Based On Failure To Receive Office Action (MPEP 711.03(c) II and 37 CFR § 1.181). No fee required**

Where an applicant contends that the original Notice of Allowance and Fee(s) Due was never received, if adequately supported, the Office may grant the petition and remail the Office action. The showing required establishing non-receipt of an Office communication must include a statement from the practitioner stating that the Office communication was not received and attesting to the fact that a search of the file jacket and docket records indicates that the Office communication was not received. A copy of the docket record where the nonreceived Office would have been entered had it been received and docketed must be attached to and referenced in practitioner's statement.

Petition should be addressed to the Technology Center handling the application as follows:

By mail: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

- 3. Petition To Revive An Abandoned Application (See MPEP 711.03(c) III)**

Where there is no dispute as to whether an application is abandoned (e.g., the applicant's contentions merely involve the cause of abandonment) a petition under 37 CFR § 1.137 (a) or (b) (accompanied by the appropriate petition fee) is necessary to revive the abandoned application. The text of these rules is available on the USPTO Internet Web site. Forms for these petitions, "Petition For Revival Of An Application For Patent Abandoned Unavoidably Under 37 CFR § 1.137(a)," PTO/SB/61, and "Petition For Revival Of An Application For Patent Abandoned Unintentionally Under 37 CFR 1.137(b)," PTO/SB/64, are available in the forms section of the USPTO website: <http://www.uspto.gov>.

Petitions under 37 CFR § 1.137 should be addressed to the Office of Petitions as follows:

By mail: Mail Stop Petition, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

**Note:** Abandonment takes place by operation of law for failure to reply to an Office action or timely pay the issue fee, not by operation of the mailing of a Notice of Abandonment

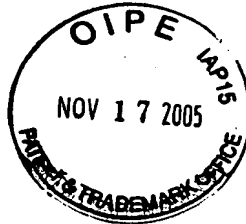


# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

04743 7590 02/18/2005  
MARSHALL, GERSTEIN & BORUN LLP  
6300 SEARS TOWER  
233 S. WACKER DRIVE  
CHICAGO, IL 60606



EXAMINER	
DANG, PHUC T	
ART UNIT	PAPER NUMBER

2818

DATE MAILED: 02/18/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,849	11/24/2003	Sang Kyun Park	29936/39762	5192

TITLE OF INVENTION: METHOD OF FORMING COPPER WIRING IN SEMICONDUCTOR DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/18/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

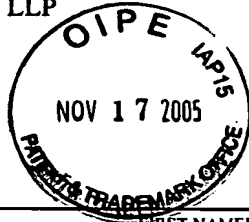
**Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (703) 746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

04743 7590 02/18/2005

**MARSHALL, GERSTEIN & BORUN LLP**  
**6300 SEARS TOWER**  
**233 S. WACKER DRIVE**  
**CHICAGO, IL 60606**



Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,849	11/24/2003	Sang Kyun Park	29936/39762	5192

TITLE OF INVENTION: METHOD OF FORMING COPPER WIRING IN SEMICONDUCTOR DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/18/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
DANG, PHUC T	2818	438-672000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change In Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

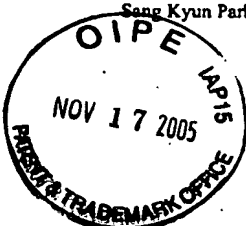
This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,849	11/24/2003	Sang Kyun Park	29936/39762	5192
04743	7590	02/18/2005		
MARSHALL, GERSTEIN & BORUN LLP 6300 SEARS TOWER 233 S. WACKER DRIVE CHICAGO, IL 60606				
				
			EXAMINER DANG, PHUC T	
			ART UNIT 2818	
DATE MAILED: 02/18/2005				

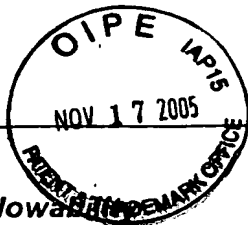
## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 25 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 25 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.



# Notice of Allowability

Application No.

10/720,849

Examiner

PHUC T. DANG

Applicant(s)

PARK, SANG KYUN

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to November 24, 2003.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ The drawings filed on 24 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892).
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

PHUC T. DANG PD  
PRIMARY EXAMINER



### DETAILED ACTION

1. Claims 1-9 are allowed.
2. The following is an examiner's statement of reasons for allowance:

With respect to independent claims 1, the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming a copper wiring in a semiconductor device, comprising a step of forming a copper anti-diffusion insulating film and a second interlayer insulating film on the entire structure on which the metal element doping layer is formed, wherein a copper alloy layer and a metal oxide layer are formed at the interface of the copper wiring and the copper anti-diffusion insulating film due to heat upon depositing the insulating film, and the metal oxide layer is formed at the interface of layers around the copper wiring and the copper anti-diffusion insulating film, in combination with the rest of the limitations of independent claim 1.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reasons for Allowance".
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is (571) 272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.
5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization

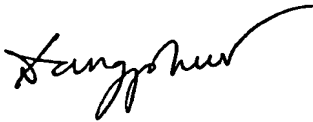
Art Unit: 2818

where this application or proceeding is assigned are 703-872-9306 for regular communications and After Final communications.

6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang

PP



Primary Examiner

Art Unit 2818

PM1001

Application Entry / Update

10:59:59

11/07/05

Docket Number: 39762

US UNITED STATES

Status: .....

Title: 01 METHOD OF FORMING COPPER WIRING IN

02 SEMICONDUCTOR DEVICE

03

Type:

Related Docket#s

Inventors: PARK, S.

Client:

29936 SHIN &amp; KIM

Owner Ref#: P0030301HD

Carton Number:

Date Forwarded: 11/24/03 Appl.Complete? Y

CPA Filing:

PCT Flag:

Priority Dt/No.:

Mot. of Appeal Date/No.:

Interference Number:

Agent:

Fax Service:

Taxes? Y

Based on: KR 2003-46295 7/9/03

Date Added: 11/17/2003

Attorneys: JPZ, AGS

Convention: N

Small Entity:

Confirm.No.: 5192

Serial Number: 010/720849

Group: 2812 Date Filed: 11/24/03

IDS Sent? Y

Appl.Allowed:

Issue Fee Paid:

Publication Dt: 1/13/05

Publ.No: US-2005-0009331-A1

Assignee: HYNIX SEMICONDUCTOR INC.

Reel/Frame: 015046/0061

Recorded: 3/08/04

ENTER-Accept F1-Actions F5-No Update F9-Issue F11-Chg# F24-Delete

PM1003

## Patent Actions

11:00:12

11/07/05

SHIN &amp; KIM

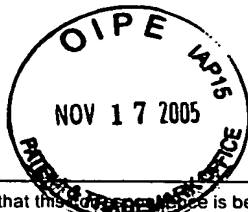
US

Docket: 39762

SEQ	Docket Dt.	Due Date	Action	Reply Date	Reply
003	11/24/04	11/24/04	STAT	12/01/04	OFF PER MRH DOCKET
005			FRWD	11/24/03	EXE.DECL.;PRIOR.DOC. W/APP
006	02/24/04	02/24/04	*INF	07/21/05	IDS W/CM
007	02/24/04	02/24/04	ASSN	03/04/04	FRWD ASSN FOR RECORDAL W/CM
008			RECD	09/28/05	SIGNED IDS
009			RECD	10/13/05	NOTICE OF ABANDONMENT

.000

ENTER-Add/Update line F1-Return F5-New Record Roll Up/Roll Down



I hereby certify that this document is being deposited with the U.S. Postal Service with sufficient postage for First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

November 15, 2005

Signature: \_\_\_\_\_

(James P. Zeller)

Docket No.: 29936/39762  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Sang Hyun Park

Application No.: 10/720,849

Group Art Unit: 2818

Filed: November 24, 2003

Examiner: Phuc T. Dang

For: METHOD OF FORMING COPPER WIRING IN  
SEMICONDUCTOR DEVICE

**DECLARATION OF JAMES P. ZELLER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

James P. Zeller, hereby declares as follows:

1. I am an attorney of law, and a partner with the law firm Marshall, Gerstein & Borun LLP in Chicago, Illinois, and am a registered practitioner before the United States Patent and Trademark Office (the "PTO") with Registration Number 28,491.
2. I am an attorney responsible for prosecuting the above-referenced application (the "application").
3. My firm received a notice of an issued abandonment dated October 13, 2005, in this application. The Notice for failure to timely pay the required issue fee and publication fee.
4. However, no one at our firm received the notice of allowance which was mailed by the PTO on February 18, 2005. I learned of the mailing of the notice of allowance only after the PAIR database for this application was checked after my firm received the notice of abandonment.

5. A copy of our electronic docketing record for application file 29936/39762 (U.S. Patent Application Number 10/720,849) is attached to the accompanying "Petition to Withdraw Holding of Abandonment Under 37 C.F.R. § 1.181" as Exhibit "C."

6. As clearly shown from the accompanying petition and attachments, the notice of allowance was never received by this firm and must be deemed lost without any penalty to the applicants.

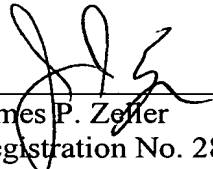
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

November 15, 2005

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

By:

  
James P. Zeller  
Registration No. 28,491  
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